3.2 Writing and Simplifying Ratios: 2-hour Pack

Calculators not allowed · about 120 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Write the ratio 25 : 126 in the form 1 : n.

(2)

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2 Zain's fruit squash is made with juice and water in the ratio 1 : 5. Ravi's squash is made with juice and water in the ratio 4 : 4. Whose squash is stronger (has the greater fraction of juice)? Show your working.

(3)

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3 Red and blue paint are mixed in the ratio 6 : 1. What fraction of the mixture is red?

(2)

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4 Write the ratio 0.7 : 0.6 in its simplest form using whole numbers.

(2)

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5 Orla's fruit squash is made with juice and water in the ratio 1 : 6. Quinn's squash is made with juice and water in the ratio 6 : 8. Whose squash is stronger (has the greater fraction of juice)? Show your working.

(3)

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6 5/9 of the sweets in a jar are red and the rest are green. Write the ratio of red sweets to green sweets in its simplest form.

(2)

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7 Uma's fruit squash is made with juice and water in the ratio 5 : 6. Tom's squash is made with juice and water in the ratio 4 : 5. Whose squash is stronger (has the greater fraction of juice)? Show your working.

(3)

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8 Write the ratio 8 : 27 in the form 1 : n.

(2)

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9 Red and blue paint are mixed in the ratio 1 : 3. What fraction of the mixture is red?

(2)

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10 Isla's fruit squash is made with juice and water in the ratio 2 : 7. Kira's squash is made with juice and water in the ratio 2 : 3. Whose squash is stronger (has the greater fraction of juice)? Show your working.

(3)

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11 Write the ratio 20 : 110 in the form 1 : n.

(2)

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12 Ravi's fruit squash is made with juice and water in the ratio 2 : 3. Tom's squash is made with juice and water in the ratio 4 : 4. Whose squash is stronger (has the greater fraction of juice)? Show your working.

(3)

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13 The ratio of the length of a model to the length of the real plane is 4 : 20. Write this ratio in the form 1 : n.

(2)

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14 Write the ratio 8 : 46 in the form 1 : n.

(2)

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15 Write the ratio 7 cm : 8 m in its simplest form.

(2)

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16 Grace's fruit squash is made with juice and water in the ratio 6 : 6. Quinn's squash is made with juice and water in the ratio 2 : 8. Whose squash is stronger (has the greater fraction of juice)? Show your working.

(3)

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17 The ratio of the length of a model to the length of the real plane is 5 : 12. Write this ratio in the form 1 : n.

(2)

---

18 5/8 of the sweets in a jar are red and the rest are green. Write the ratio of red sweets to green sweets in its simplest form.

(2)

---

19 Ravi's fruit squash is made with juice and water in the ratio 3 : 6. Ben's squash is made with juice and water in the ratio 4 : 4. Whose squash is stronger (has the greater fraction of juice)? Show your working.

(3)

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20 Write the ratio 10 : 38 in the form 1 : n.

(2)

---

21 The ratio of the length of a model to the length of the real plane is 4 : 18. Write this ratio in the form 1 : n.

(2)

---

22 Red and blue paint are mixed in the ratio 7 : 8. What fraction of the mixture is red?

(2)

---

23 Victor's fruit squash is made with juice and water in the ratio 2 : 2. Zain's squash is made with juice and water in the ratio 4 : 2. Whose squash is stronger (has the greater fraction of juice)? Show your working.

(3)

---

24 Write the ratio 20 : 47 in the form 1 : n.

(2)

---

25 Write the ratio 0.5 : 2 in simplest whole-number form.

(1)

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26 Quinn's fruit squash is made with juice and water in the ratio 1 : 3. Dev's squash is made with juice and water in the ratio 2 : 2. Whose squash is stronger (has the greater fraction of juice)? Show your working.

(3)

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27 Write the ratio 0.7 : 0.1 in its simplest form using whole numbers.

(2)

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28 Write the ratio 0.4 : 0.7 in its simplest form using whole numbers.

(2)

---

29 The ratio of the length of a model to the length of the real plane is 10 : 21. Write this ratio in the form 1 : n.

(2)

---

30 Tom's fruit squash is made with juice and water in the ratio 5 : 4. Grace's squash is made with juice and water in the ratio 6 : 8. Whose squash is stronger (has the greater fraction of juice)? Show your working.

(3)

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31 The ratio of the length of a model to the length of the real plane is 10 : 23. Write this ratio in the form 1 : n.

(2)

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32 Write the ratio 25 : 128 in the form 1 : n.

(2)

---

33 Noah's fruit squash is made with juice and water in the ratio 6 : 2. Sofia's squash is made with juice and water in the ratio 6 : 6. Whose squash is stronger (has the greater fraction of juice)? Show your working.

(3)

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34 The ratio of the length of a model to the length of the real plane is 2 : 6. Write this ratio in the form 1 : n.

(2)

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35 Ravi's fruit squash is made with juice and water in the ratio 6 : 8. Jack's squash is made with juice and water in the ratio 1 : 4. Whose squash is stronger (has the greater fraction of juice)? Show your working.

(3)

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36 Write the ratio 0.7 : 0.4 in its simplest form using whole numbers.

(2)

---

37 Write the ratio 20 : 113 in the form 1 : n.

(2)

---

38 Grace's fruit squash is made with juice and water in the ratio 2 : 4. Ravi's squash is made with juice and water in the ratio 6 : 6. Whose squash is stronger (has the greater fraction of juice)? Show your working.

(3)

---

39 1/6 of the sweets in a jar are red and the rest are green. Write the ratio of red sweets to green sweets in its simplest form.

(2)

---

40 Ben's fruit squash is made with juice and water in the ratio 3 : 5. Zain's squash is made with juice and water in the ratio 1 : 8. Whose squash is stronger (has the greater fraction of juice)? Show your working.

(3)

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Mark scheme · 3.2 Writing and Simplifying Ratios: 2-hour Pack

Question 1

divides both parts by 25	M1
1 : 5.04 cao	A1

Answer: **1 : 5.04**

Question 2

1/6 or a decimal for one squash	M1
4/8 for the other, compared	M1
Ravi's squash is stronger	A1

Answer: **Ravi's squash is stronger**

Question 3

6 + 1 = 7 parts	M1
6/7 cao	A1

Answer: **6/7**

Question 4

multiplies both parts by 10	M1
7 : 6 cao	A1

Answer: **7 : 6**

Question 5

1/7 or a decimal for one squash	M1
6/14 for the other, compared	M1
Quinn's squash is stronger	A1

Answer: **Quinn's squash is stronger**

Question 6

green = 1 - 5/9 = 4/9	M1
5 : 4 cao	A1

Answer: **5 : 4**

Question 7

5/11 or a decimal for one squash	M1
4/9 for the other, compared	M1
Uma's squash is stronger	A1

Answer: **Uma's squash is stronger**

Question 8

divides both parts by 8	M1
1 : 3.375 cao	A1

Answer: **1 : 3.375**

Question 9

1 + 3 = 4 parts	M1
1/4 cao	A1

Answer: **1/4**

Question 10

2/9 or a decimal for one squash	M1
2/5 for the other, compared	M1
Kira's squash is stronger	A1

Answer: **Kira's squash is stronger**

Question 11

divides both parts by 20	M1
1 : 5.5 cao	A1

Answer: **1 : 5.5**

Question 12

2/5 or a decimal for one squash	M1
4/8 for the other, compared	M1
Tom's squash is stronger	A1

Answer: **Tom's squash is stronger**

Question 13

20 ÷ 4	M1
1 : 5 cao	A1

Answer: **1 : 5**

Question 14

divides both parts by 8	M1
1 : 5.75 cao	A1

Answer: **1 : 5.75**

Question 15

converts to the same units: 7 : 800	M1
7 : 800 cao	A1

Answer: **7 : 800**

Question 16

6/12 or a decimal for one squash	M1
2/10 for the other, compared	M1
Grace's squash is stronger	A1

Answer: **Grace's squash is stronger**

Question 17

12 ÷ 5	M1
1 : 2.4 cao	A1

Answer: **1 : 2.4**

Question 18

green = 1 - 5/8 = 3/8	M1
5 : 3 cao	A1

Answer: **5 : 3**

Question 19

3/9 or a decimal for one squash	M1
4/8 for the other, compared	M1
Ben's squash is stronger	A1

Answer: **Ben's squash is stronger**

Question 20

divides both parts by 10	M1
1 : 3.8 cao	A1

Answer: **1 : 3.8**

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Question 21

18 ÷ 4	M1
1 : 4.5 cao	A1

Answer: **1 : 4.5**

Question 22

7 + 8 = 15 parts	M1
7/15 cao	A1

Answer: **7/15**

Question 23

2/4 or a decimal for one squash	M1
4/6 for the other, compared	M1
Zain's squash is stronger	A1

Answer: **Zain's squash is stronger**

Question 24

divides both parts by 20	M1
1 : 2.35 cao	A1

Answer: **1 : 2.35**

Question 25

1:4 cao	B1

Answer: **1:4**

Question 26

1/4 or a decimal for one squash	M1
2/4 for the other, compared	M1
Dev's squash is stronger	A1

Answer: **Dev's squash is stronger**

Question 27

multiplies both parts by 10	M1
7 : 1 cao	A1

Answer: **7 : 1**

Question 28

multiplies both parts by 10	M1
4 : 7 cao	A1

Answer: **4 : 7**

Question 29

21 ÷ 10	M1
1 : 2.1 cao	A1

Answer: **1 : 2.1**

Question 30

5/9 or a decimal for one squash	M1
6/14 for the other, compared	M1
Tom's squash is stronger	A1

Answer: **Tom's squash is stronger**

Question 31

23 ÷ 10	M1
1 : 2.3 cao	A1

Answer: **1 : 2.3**

Question 32

divides both parts by 25	M1
1 : 5.12 cao	A1

Answer: **1 : 5.12**

Question 33

6/8 or a decimal for one squash	M1
6/12 for the other, compared	M1
Noah's squash is stronger	A1

Answer: **Noah's squash is stronger**

Question 34

6 ÷ 2	M1
1 : 3 cao	A1

Answer: **1 : 3**

Question 35

6/14 or a decimal for one squash	M1
1/5 for the other, compared	M1
Ravi's squash is stronger	A1

Answer: **Ravi's squash is stronger**

Question 36

multiplies both parts by 10	M1
7 : 4 cao	A1

Answer: **7 : 4**

Question 37

divides both parts by 20	M1
1 : 5.65 cao	A1

Answer: **1 : 5.65**

Question 38

2/6 or a decimal for one squash	M1
6/12 for the other, compared	M1
Ravi's squash is stronger	A1

Answer: **Ravi's squash is stronger**

Question 39

green = 1 - 1/6 = 5/6	M1
1 : 5 cao	A1

Answer: **1 : 5**

Question 40

3/8 or a decimal for one squash	M1
1/9 for the other, compared	M1
Ben's squash is stronger	A1

Answer: **Ben's squash is stronger**

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